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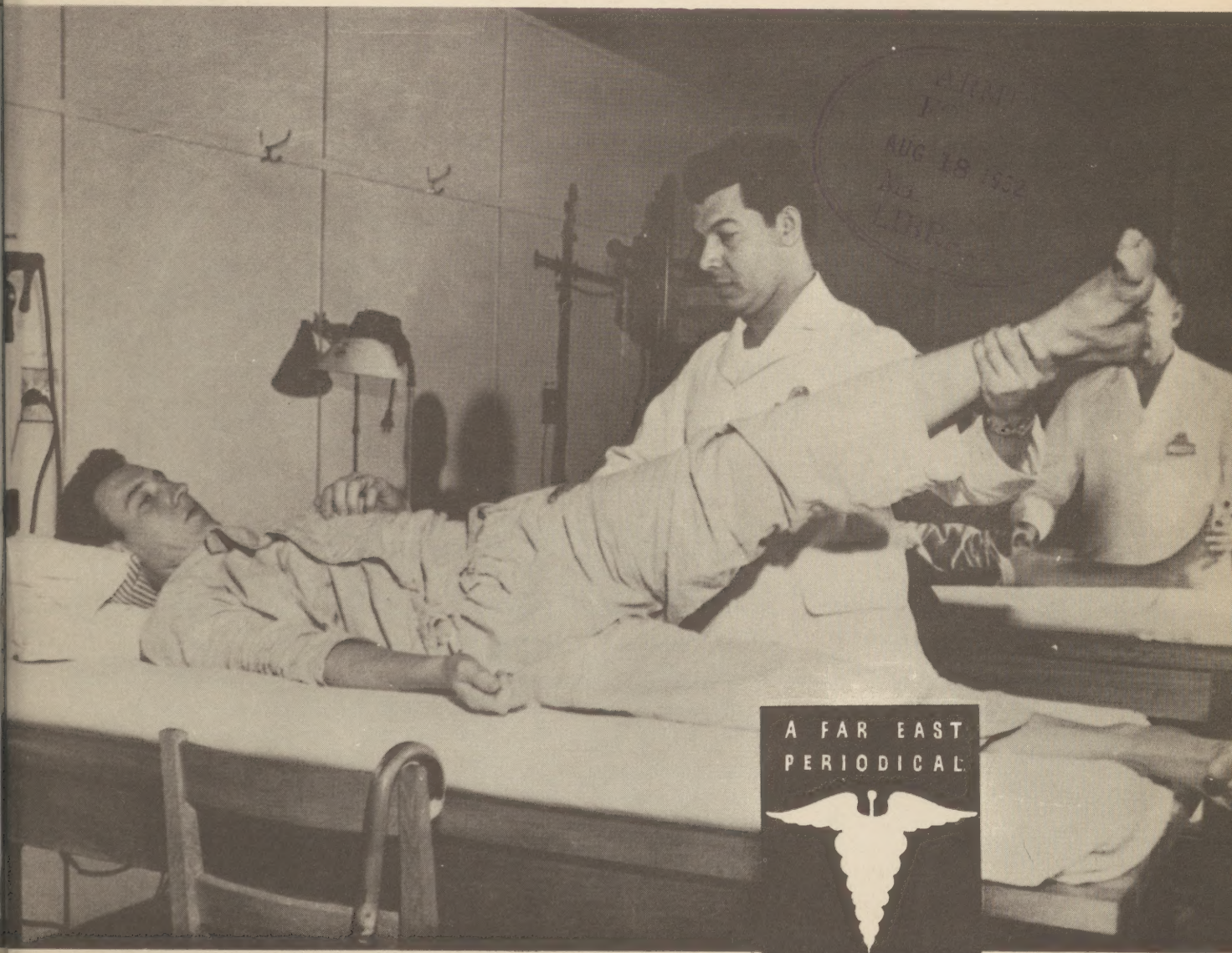


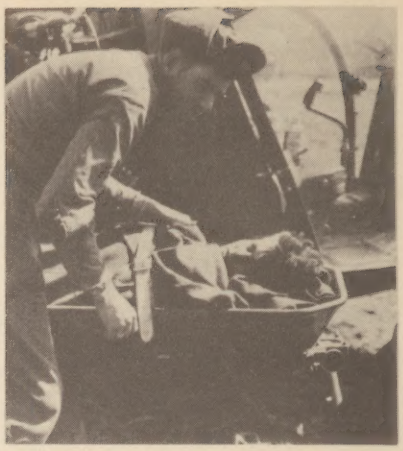
AUG 18 1952

A FAR EAST PERIODICAL OF ARMY MEDICAL SERVICES

MEDICAL SECTION - HQ - FEC, AND UNC
APO 500

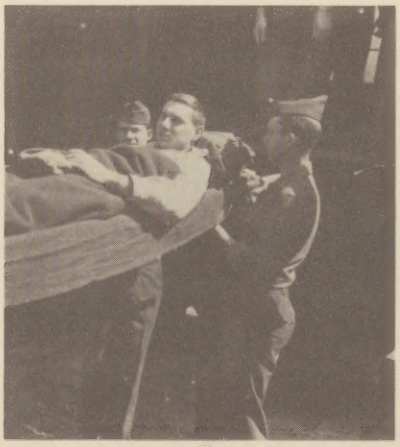
UNCLASSIFIED

EIGHTH ARMY EVACUATION - - Operation "LIFELINE"



Evacuation of the wounded begins on the battlefield when medical aidmen treat the wounded where they lie. At the aid station they are given more treatment, segregated according to the seriousness of their wounds and prepared for further evacuation. The more seriously wounded are quickly air lifted to a MASH for emergency surgery.

Less seriously sick and wounded UN personnel are evacuated from a railhead by railroad ambulances. Near Yonchon, Korea, Eighth Army medics supervise the removal of ambulatory and litter patients for transfer to a MASH or Evacuation Hospital. Those sick and wounded who require more definitive treatment and convalescence are evacuated by hospital train to hospitals farther down the peninsula.



While enroute they are constantly attended by doctors, nurses and medical corpsmen whose every hour is dedicated to the welfare and comfort of the patient. At a railhead in the south of Korea the patients are off-loaded at an Evacuation Hospital where their physical condition is thoroughly evaluated. Those patients whose condition is such that hospitalization is indicated in excess of Eighth Army holding policy are then flown to hospitals in Japan.

THE SURGEON'S Circular Letter

Volume VII - Number 6

JUNE 1952

Headquarters
Far East Command
Medical Section
APO 500

ADMINISTRATIVE

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141ST GENERAL HOSPITAL HOST FOR REGIONAL MEDICAL CONFERENCE

The 141st General Hospital played host to the one-day Regional Medical Conference, JLCOM, on 20 June 1952. A feature of this conference was the inclusion of Dental Corps and Army Nurse Corps panels.

Papers presented at the medical session included "Non-Gonococcic Urethritis," by Major Edward Gartman, MC, Chief, Urology Section, 141st General Hospital; "Untoward Reaction to Blood Transfusion," by Dr. William C. Moloney, Professor of Clinical Medicine, Tufts College Medical School, Boston; "Traumatic Diaphragmatic Hernia Repair," by 1st Lt Emory G. West, MC, Chief, Radiological Service, US Army Hospital, Fukuoka; "Intramedullary Fixation of Fractures," by 1st Lt Ray A. Haag, MC, 141st General Hospital; "Peptic Ulcer," by Dr. Thomas S. Sappington, Associate in Medicine, George Washington University School of Medicine, Washington, D. C.;"Psychological Aspects of Upper Gastrointestinal Disorders (Part I)," by Capt Milton LeVine, MC, 141st General Hospital; "Psychological Aspects of Upper Gastrointestinal Disorders (Part II)," by Capt Clifton C. Rhead, Jr., MC, 141st General Hospital; "Metabolic Aspects of the Management of Gastrointestinal Disease," by Dr. Thomas S. Sappington; "Newer Aspects of Red Cell Antigen and Antibody Reactions," by Dr. William C. Moloney.

The Dental Corps panel, held in the Camp Hakata Officers Open Mess, discussed the following subjects: "Management of War Wounds" by Colonel James E. Chipps, DC, Consultant in Oral Surgery, Far East Command; "Periodontia," by Colonel Alfred E. Toye, DC, Chief, Dental Service, Tokyo Army Hospital; and "Fractures of the Jaw," by Colonel Chipps.

In the hospital Administration Building, papers presented to the Army Nurse Corps panel included "The Army Nurse as a Head Nurse," by Major Edith Aynes, ANC, Chief Nurse, JLCOM; "Aspects of Hemorrhagic Fever," by 1st Lt Alberta Carlson, ANC, Osaka Army Hospital; "Nursing Care of the Hepatitis Patient," by Capt Mary V. Duncan, ANC, 141st General Hospital; "Treatment of the Neuropsychiatric Patient with Insulin and Electric Shock Therapy," by Capt Ruth E. Smith, ANC, 141st General Hospital; "The Cold Injury Section," by 1st Lt Elizabeth Kantzer, ANC, Osaka Army Hospital, and "The Patient in the Respirator," by 1st Lt Carmel Iannace, ANC, US Army Hospital, Fukuoka.

The combined assembly was greeted and addressed by Major General William E. Shambora, MC, Chief Surgeon, Far East Command; Brigadier General James P. Cooney, MC, Surgeon, JLCOM; Colonel Roland K.Charles Jr., MC, Commanding Officer, 141st General Hospital; Colonel Lyman C. Duryea, MC, Commanding Officer, US Army Hospital, Fukuoka; and Colonel Charles L. Leedham, MC, Consultant in Medicine, Far East Command.

Chairmen for the conferences were Lt Colonel John J. Folk, MC, Lt Colonel Ivan C. Dimmick, MC, Capt Frank E. App, USAF (MC), Colonel Wayne A. Hayes, DC, and Lt Colonel Marian York, ANC.

COLONEL JOHN M. SALYER NEW FEC SURGICAL CONSULTANT

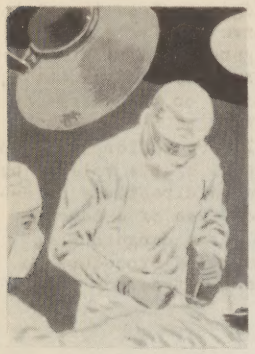
Colonel John M. Salyer, MC, was recently designated as the FEC Surgical Consultant, to replace Colonel Walter H. Matuska, MC, who was reassigned to the Tokyo Army Hospital as Chief of the Surgical Service.

Colonel Salyer, a native of Tennessee, received his AB degree from the University of Kentucky in 1935, and his MD degree from Vanderbilt University Medical School in 1938. Subsequent to his graduation from Vanderbilt, Colonel Salyer took a surgical internship at the Vanderbilt University Hospital.

Prior to his current FEC tour he completed a one-year residency training period in general and thoracic surgery at Fitzsimons Army Hospital. Before assumption of his present duties, Colonel Salyer was the Chief of the Surgical Service, 382d General Hospital. He is a Diplomate, American Board of Surgery; a Fellow, American College of Surgeons; and a Member, Denver Academy of Surgery; in addition to membership in other societies.

THE STANDARDS OF MILITARY PRACTICE IN THE ARMY*

Dr. Edward D. Churchill, John Homans Professor of Surgery, Chief of the General Surgical Services, Massachusetts General Hospital



Doctors, of all people, should be able to understand the Army, but, perhaps more frequently than others, they are likely to be frustrated by it. This happens the moment the doctor becomes personally involved and before he has any real concept of the organization and its purpose. The moment a doctor gives way to frustration and reacts emotionally, he can see nothing good in the Army and becomes resentful toward it. I can assure you that the only way to adjust yourself is to meet problems on an intellectual rather than an emotional level. Once you do that, you begin to realize that you are part of a well-organized institution, and one that will challenge you to put forth your best efforts toward achieving high standards of medicine.

A military organization is a segment of our society temporarily set apart for a specialized function; somewhat like an athletic team, with its own training schedules and training tables, set apart from the rest of the student body. Army doctors are a cross-section of all the doctors in the country; they are no better and no worse. An Army can't be any better or any worse than the society from which it is drawn -- not, at least, in this country. But the members of this group, like the members of an athletic team, are trained to work together toward a specific and limited objective -- namely, the defense of the society of which they are a part; from which they came, and to which they will return.

No man, or committee, or group of committees could ever design an Army. An Army isn't built that way. It's not only too complicated but it has to work in common purpose with the society from which it is drawn. In other words, the Army organization has evolved as a specialized part of society as a whole and parallel with it. No physiologist could design a lung, a kidney, or a stomach. They are products of evolution, and the same is true of this very complex, integrated, social organization -- the Army.

Any fool can come into the Army, look around the first day and say, "This should be done differently. I know a much better way to do it." You might stop a truck loaded with ammunition on its way to a dump in the combat zone and say to the driver, "The carburetor in your truck is no good. I can give you a much better one that will get you there quicker and, what's more, it will save gasoline, which is in short supply." It is quite true that you might install a carburetor that would get him there faster and that would save gasoline, but what will happen if the carburetor breaks down and the truck driver doesn't know how to repair it or there are no spare parts available? The truck driver knows that he can get to his destination and back again with the carburetor that he is familiar with, and will not take any chances with the new type of carburetor you recommend when he already has one that will enable him to accomplish his mission. In this enormous organization it is easy to make a change on paper but to actually bring about a change it is necessary to make all the intricate readjustments in every area affected.

Within its organization, the Army has developed a medical service which can have no other standards than those of civilian medical practice. Excellent organization may enable it to exceed civilian medicine in efficiency. Time after time I've seen wounded men saved who would have died if they had landed on the doorstep of our very finest civilian hospitals. On the whole Joe Doakes gets better medical care in the Army than he would in his own home town.

To achieve this level of efficiency, some restrictions must be placed on the professional functions of the doctor, and it is this restricting influence that irks most doctors upon entering the service. An understanding of the purpose of these restrictions is essential. Once a doctor knows why he is being asked to do a thing in a certain way, he usually, after batting his head against the wall for a little while, will begin to understand. In the Army, as in any large organization, there is always conflict between complete individual freedom of action and some centralized control. The old argument between the state and federal governments rightly holds that centralization of authority will result in atrophy of local resourcefulness and vigor of action. It's the constant dilemma in any form of organized society. Everyone in medicine fully appreciates that administrative techniques cannot be substituted for alert medical practice.

Centralization of authority also creates a point of leverage on which pressure can be applied by groups or individuals to introduce some new pharmaceutical product or change technical procedures. In civilian practice, such a product or procedure stands or falls by the jury judgment of all practitioners. They may adopt it for awhile, then drop it. Quite often there is a great to-do in the medical journals about some new operation which, eventually, fades into oblivion. The Army recognizes the danger of this pressure and you have no idea how much time is spent in giving fair consideration to new products or procedures and, at the same time, resisting the pressure to adopt them. A reasonable degree of centralization of authority in technical procedures is very difficult to maintain. It is so likely to result in what Winston Churchill has called "exalted brooding" over the work of others. It is vital to medicine that the policy-makers and planners keep close to the impact of actual experience.

I can assure you that the Army is fully aware of the threat to effective action that comes with too great centralization. Many medical officers in the field seem to think that some gray-haired, irritable, old general or colonel in Washington, who has not been out of an armchair for forty years, writes the directives. The Army safeguards against the danger of this "exalted brooding" by allowing a man to stay in Washington only so many years before moving him again into the field.

To appreciate fully the decentralization that actually exists in the Army, one must have the opportunity to view the organization at various levels, in overseas service and in the continental United States. The Army places great store on the impact of experience, rather than the blue print. It very watchfully guards against interference by higher headquarters in the operational activities of smaller units. Only by having operational and tactical responsibility delegated to those actually carrying

it out can effective action be achieved. Any clever person can make plans for winning a war -- if he has no responsibility for consummating them.

As you know, running down through this vast organization are the nerve fibers of executive responsibility -- commonly called the channels of command--necessary for effective decisions. Decisions are made by the men held accountable for carrying them out. As a supporting technical service, medicine must be responsive to the command line of administration and, except for certain minor operational tasks involving executive responsibility -- chiefly centered in hospital administration, the doctor does not command, he advises. His advice may be accepted or it may be rejected. Ingenuity and resourcefulness on the part of the doctor is encouraged, so long as he is definitely and effectively subordinate in status to the commander who carries the line of executive responsibility. And that is the way it should be. The traditional role of the doctor is to advise the patient, not to command. In civil life the doctor advises his municipal authorities concerning hospital facilities to be provided; it is the responsibility of the mayor and the city fathers to provide them. The doctor is consulted because of his expert knowledge, and is judged by the soundness of his advice, rather than by his ability to compel obedience or to invoke sanctions if his advice is not followed. The moment a doctor steps out of his advisory role in relation to his patients or toward social organization--municipal, state or federal, military or non-military -- he loses his effectiveness. Don't undervalue your function as advisors. Accept it and be proud of it.

Quite separate from command channels are the technical channels of the Medical Department. Technical bulletins and directives are summations of technical policies recommended by the Medical Department. In certain instances, principally those with administrative implications, the Medical Department may issue its directives through command channels, for instance, when the Chief of Staff wishes to leave no alternative as to whether soldiers are to receive inoculations against tetanus. Under such circumstances action is not left to the discretion of the local group; they must give the inoculations because the directive has been phrased as an order. The Medical Department avoids the use of command channels insofar as possible in the transmission of professional advice and policies.

It is very difficult to phrase technical advice as an order because exceptions are so frequently encountered in which responsibility should rest upon the judgment of the medical officer on the scene. Take the use of the tourniquet as an example. Many committees of surgeons have struggled to formulate rules governing its use in freshly wounded casualties. A tourniquet is a life-saving device, yet at the same time a deadly device. It is just as important as the knife of a surgeon and just as dangerous if not properly used. How can orders possibly be formulated concerning its use? In the elective use of the tourniquet in civilian surgery it is easy to hold fast to a rule that the tourniquet be loosened every half hour. To apply the same rule along the line of evacuation, from battalion aid through the collecting company and the clearing company to the forward hospital, would be far from realistic because the loosening of a tourniquet may be followed by rapid exsanguination and death. Consequently, medical officers must distinguish immediately between a tourniquet applied by non-medical hands and one applied by a medical officer. The former should be challenged and usually removed by the first medical officer who sees the patient. When a medical officer applies a tourniquet and evacuates the casualty one must assume that he had a very good reason for doing so. A medical officer has the knowledge required to weigh the hazards of ischemia, of nerve paralysis, and of the likelihood of causing gas gangrene against the necessity for controlling hemorrhage. Consequently, unless he has written instructions on the emergency medical tag that the tourniquet is to be loosened, it should remain in place until preparation has been made to deal with the consequences of its release by a blood transfusion. There are no directives or orders that will insure the correct use of a tourniquet because leaving it on can be as dangerous as taking it off. This is an example of procedure in which the judgment of the medical officer on the scene must be relied upon.

In general, technical bulletins and directives are sincere efforts to inform the individual medical officer of methods and procedures best adapted to military usage. Doctors need that information and need it badly. It should be welcomed and a medical officer should only reject the advice when existing circumstances leave no reasonable doubt as to the wisdom of an alternative course. Such circumstances may arise, and one may inquire what is a reasonable doubt? It's not a whim, or a fancy. It's not a belief based on an emotional approach to a problem, or a belief that despite lack of experience, you know a better way. Technical directives and bulletins are the products not only of accumulative experience but of constant research carried on within the Army or research with which the Army is closely associated. They are the products of long-range planning. I can assure you that these bulletins are given the most expert thought and preparation and that the professional policies issued over the name of The Surgeon General of the United States Army are the best guidance available. The Surgeon General turns for advice to the committees of the National Research Council, assembled from top flight professional personnel throughout the country.

I was giving some examinations a week or so ago for the American Board of Surgery and also for internship appointments. I took occasion to ask each candidate whether, if he were embarking with a forward mobile hospital, he would requisition a supply of ACTH and cortisone to take with him. About 75 percent of the candidates said they would. "What are you going to use it for?" I asked. They didn't quite know, but they felt sure it would come in handy. Imagine the reactions of these surgeons if the Surgeon General said, "There are no indications for the use of ACTH and cortisone in the type of case treated by a mobile hospital." They will immediately jump to the conclusion that the Army has never even heard of ACTH and cortisone. Actually, the Surgeon General would be following the advice of Colonel Stone, in consultation with committees that meet every month to discuss this very problem.

There is a mass of recorded experience relating to military medicine and surgery of which few civilian doctors are aware. If they would brush the dust off the periodical literature shelf they could find a great deal that they need to know, but, since it is the general view of the medical profession that anything over five years old is out of date, they never bother. Flying steel has been striking human tissues for several centuries and surgeons of first rate intelligence have been pondering over the result during these same centuries.

Suppose tomorrow all neurosurgeons put their instruments on the shelves, stopped writing, and no further work in neurosurgery was done for ten years. Then a new group of surgeons started afresh to design their own procedures, without consulting the vast literature on the subject. It would take them a little while, wouldn't it, to reach the point where the previous group had left off ten years before?

This is what actually happens in military surgery. A year after a war is finished scarcely any of our current periodicals will accept a paper on the surgery of wounds. It becomes a dead subject. Medical students are bored if you mention a wound. I have an old French book, published in 1791 on the subject of wounds by firearms, in which the author states the same thing--surgeons in a current war never begin where the surgeons in the previous war left off -- they always go through another long learning period. All military medicine insofar as civilians are concerned, is a discontinuous specialty, consequently, in every new war the same stupid mistakes are made again and soldiers lose their lives or limbs, because the doctor was ignorant of past experience. I cannot overemphasize the need to study military medicine and surgery.

In the Army one may encounter a different framework of emphasis and values from that of civilian medicine. But a difference in emphasis and values does not mean a difference in standards. It means a different goal -- a different objective. Manpower is of primary consideration in the Army and days lost from work in a military organization are of paramount importance. This fact is reflected in the advice of a technical bulletin or directive. Take, for example, the problem of the pilonidal sinus or cyst. In any group of six surgeons, probably each one would handle a case in a slightly different way, depending upon his training and personal experience. In the Army there are a great many cases of pilonidal sinuses and cysts. Should they be cut out and, if so, should they be closed primarily? Should a radical resection be done? Professional advisors to The Surgeon General said, "Only operate on a pilonidal sinus when it is supporating and then employ drainage. Do not try to extirpate a congenital defect during a war when every ounce of manpower is badly needed." Now, what did that directive accomplish? Over a two-year period, 425,000 hospital days were saved. By limiting the surgery to incision and drainage, or withholding it altogether, 1,192 man-years of work were obtained for the Army. Do you want 1,192 GI's at work or do you want them to be occupying hospital beds for a year.

It is difficult to stay the hand of the individual surgeon when he is an enthusiast for a certain method. A surgeon who has treated fractures with unpadded plaster will insist that this method should be followed in the Army. But if his patients are evacuated in an ambulance over a rough road they will lose their skin. A hanging cast may be admirable to correct the deformity in a broken humerus but if the patient is placed on his back on an ambulance litter he is not going to be happy. It is a highly specialized therapeutic splint but it is not adapted to transportation.

I've had long arguments with doctors about the removal of intervertebral discs. In 1943 it was a new procedure and the medical journals were full of enthusiasm. During the Southern Tunisian campaign I was down near Tebessa where one of our best evacuation hospitals was situated. Here, in the middle of the desert, surrounded by Arabs, flies and Germans, a fine neurosurgeon had operated for an intervertebral disc. What an anomaly that was to operate on that patient way off in a corner of Southern Tunisia in the midst of a war! It was necessary to check on how many of these overseas operations for intervertebral discs really got a soldier back to duty. There proved to be only a few very exceptional cases. This operation was not ruled out altogether but it was directed that such an operation must have the approval of the disposition board of a general hospital. That left a loophole to salvage the occasional patient with a clearcut diagnosis and strongly motivated to return to duty. In my experience with hundreds of surgeons and medical officers, I'm convinced that, if shown the reason for a directive, in nine cases out of ten, they will agree with its provisions.

Resentment is a common response to a directive that limits freedom of professional judgment. When the commander of an outfit who is on friendly terms with the hospital staff, says, "My best sergeant is having trouble with his knee, I wish you fellows would fix it up," the surgeon answers "I'd be glad to, but we have orders not to do that operation here. It's silly to send him back to a general hospital because I could do it better, but The Surgeon General won't let me." The doctor has tried to increase his own prestige at the expense of the Medical Cops of which he is a member. Doctors don't always stand on their professional dignity and integrity under these circumstances. One of the favorite topics at mess tables among layofficers and doctors is the management of NP's. I've heard the most atrocious advice and criticism handed out to staff officers by uniformed doctors, completely sabotaging the best efforts of the Medical Corps by undermining a trust that should be built up. Doctors would not think of doing this in private practice. They try to uphold the opinions of their colleagues or at least treat them with respect. But in the Army doctors are likely to forget that they are a part of the Medical Corps and that everything they tell the layman about the inadequacy of the Medical Department reduces the confidence of the very people that they are there to support. I haven't much patience with these end runs to command and you'll find that the Medical Corps hasn't either Doctors stand and fall together, and it's only by maintaining the professional dignity and the stature of the Medical Corps and the Medical Department that the mission can be accomplished. A medical officer should do everything he can to support the team work of the Medical Corps and not behave as an individual seeking some special favor or prestige.

There is a unique dilemma that confronts the doctor in uniform. He represents the humanitarian and ethical standards of society and at the same time he represents the military as a soldier. Once a doctor relinquishes his ethical standards he is treading on dangerous ground, because professional ethics as they pertain to the preservation of human dignity and the rights of a citizen soldier in a free society, must be preserved. Those of you who have read the book, The Doctors of Infamy, which showed the degradation of a portion of the German medical profession under the Nazi regime, will understand what I'm driving at. There is a part of the doctor's function which, if he will preserve it, is not subject to command for it resides in what we recognize as the ethics of our profession. Under the trying, emotional and brutal atmosphere found in warfare, it is of utmost importance that these ethical standards be preserved.

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*Presented 14 February 1951 to the Medical Service Officer Basic Course, Army Medical Service Graduate School, Army Medical Center, Washington 12, D. C.

USE OF GAS WITH RITTER DENTAL UNITS OR TRIDENTS

The following information is extracted from Port Medical Supply Information Letter VIII-17, Department of the Army, Office of The Surgeon General, dated 30 April 1952, and was received from the Ritter Company, Inc., Rochester, New York:

" 'Prestolite' or acetylene gas should not be connected to any Ritter Units or Tridents.

"In the construction of our Unit and Trident equipment, a short length of copper tubing is used to connect the gas line in the bracket table to the subbase. Acetylene gas, coming in contact with commercially pure copper, forms unstable compounds, such as copper acetylide, which is a detonator.

"This precaution is brought to our attention by the National Board of Fire Underwriters, Pamphlet #51."

CONTRIBUTIONS SOLICITED FOR "BULLETIN"

A recent letter from the editorial staff of the Armed Forces Medical Technicians Bulletin indicated that contributions of articles for publication are being sought.

Created expressly by and for the Medical Service Corps and enlisted medical services of the various Armed Forces with a world-wide distribution including foreign countries, its welfare and purpose depend entirely upon contributions of material from these individuals.

"We would appreciate your bringing this matter to the attention of your fellow MSC officers and enlisted personnel," the letter stated, "encouraging them to contribute their part to make the Bulletin 'go over'."

Articles may be addressed, through medical channels, to the Armed Forces Medical Publication Agency, 23rd and E Streets, NW, Washington 25, D. C.

SPORTS ARENA DEDICATED TO 7TH INFANTRY REGIMENT MEDIC

A sports arena carved out of a Korean hillside by men of the 1st Battalion, 7th Infantry Regiment, 3d Division, recently was dedicated in honor of PFC John Payne, of Aguilar, Colorado, killed in action in April 1952.

With a seating capacity of 1,200, the arena includes a boxing ring, volley ball court and the necessary facilities for showing motion pictures.

In dedicating the memorial, the battalion commander cited Private Payne's heroic actions on the night he was killed during a heavy barrage of mortar fire.

"On the fifth night of April, 1952," the commander said, "Private First Class Payne accompanied a reinforced squad from the second platoon of Company A to an outpost. At 2100 hours, under a heavy volume of mortar fire, the outpost was attacked by the Communists. Private First Class Payne checked and administered medical aid to the wounded, moving them out of range of enemy fire and continuing on his way to tend new casualties. While carrying out this mission, he lost his life."

RECENT DEPARTMENT OF THE ARMY AND FEC PUBLICATIONS

AR 40-950, AFR 160-21A, C-2, 4 Apr 52: Medical Service - Veterinary Meat and Dairy Hygiene General

AR 40-635, 1 May 52: Medical Service - Medical Services Account

AR 40-115, C-1, 2 May 52: Medical Department -Physical Standards and Physical Profiling for Enlistment and Induction

AR 42-40, AFR 160-26A, C-2, 2 May 52: Disease Prevention and Control - Quarantine Regulations for Vessels and Aircraft of Armed Forces

AR 40-100, C-2, 28 May 52: Medical Service - Standards of Miscellaneous Physical Examinations

AR 700-51, C-4, 5 Jun 52: Supplies and Equipment - Logistic Responsibilities

AR 40-30, C-2, 10 Jun 52: Medical Service - Contract Surgeons

SR 40-340-6, C-1, 9 Apr 52: Medical Service - Hearing Aids

SR 615-25-37, 9 Apr 52: Enlisted Personnel - Disposition of Certain Army Medical Service Professional Personnel Upon Completion of Reception Processing

SR 310-15-1, 10 Apr 52: Military Publications - Training Literature

SR 310-30-20, 23 Apr 52: Military Publications - Standard Abbreviated Job Titles

SR 600-145-15, 24 Apr 52: Personnel - Retention and Utilization of Partially Disabled Personnel

SR 735-160-21, 28 Apr 52: Property Accountability

SR 40-635-2, 1 May 52: Medical Service - Accounting for Medical Services

SR 600-330-1, AFR 125-33A, C-1, 13 May 52: Personnel - Procedures Affecting Military Prisoners

SR 345-220-5, C-1, 16 May 52: Records Administration - Files Utilization Procedures

SR 605-60-43, C-5, 21 May 52: Officers - Medical Officer Procurement - Professional Training Programs

SR 40-930-1, AFM-160-7B, C-2, 27 May 52: Medical Service - Veterinary Food Inspection

SR 310-30-51, 4 Jun 52: Military Publications - Authorization for Commercial Vehicles for TO&E of Category III Units

DA Cir 34, 1 May 52: Medical Services Account - Change-over Procedures

DA Cir 37, 13 May 52: Sec IV - Proprietary Labeling of Locally Compounded Products

DA Cir 38, 15 May 52: Sec II - Mentally Incompetent Air Force Member Hospitalized in Army Hospitals - Pay and Allowances; Sec VI - US Armed Forces Medical Journal and Medical Technicians Bulletin

DA Cir 44, 4 Jun 52: Sec III - Concealment of Physical Disability - Discharge Under Provisions of AR 615-366

ATT 8-21, 9 Apr 52: Training Test for Medical Depot, Communications Zone

TECHNICAL

Emergency Management in the Field of Neurosurgical Casualties 88
The Complications of Antibiotic Therapy 90
Atherosclerosis 93

EMERGENCY MANAGEMENT IN THE FIELD OF NEUROSURGICAL CASUALTIES

Lt Colonel Arnold M. Meirowsky, MC, Neurosurgical Consultant, FEC

EXPERIENCE has shown that earliest possible neurosurgical intervention is necessary in the presence of craniocerebral trauma if life is to be saved and if the maximum possible function is to be restored. The frequent association of intracranial hematomas with penetrating wounds of the brain is but one of the many reasons patients with craniocerebral trauma should be operated on as soon after injury as possible. The availability at MASH level of Mobile Neurosurgical Teams makes definitive neurosurgical intervention possible within hours after incurrence of the wound. Helicopter evacuation of the casualty from the Battalion Aid Station to the Mobile Neurosurgical Team will serve to speed up the process of evacuation. The Battalion Surgeon is in the position to make a substantial contribution to the welfare of this group of casualties by arranging for rapid evacuation to the Neurosurgical Team and by adherence to some of the principles which have been outlined below.

CRANIOCEREBRAL TRAUMA

Wound Care: A wide area, surrounding the site of injury, should be shaved and the scalp be cleaned. A dry dressing should be applied, consisting of gauze squares and bandage. The use of adhesive tape on the scalp should be avoided. In fungating wounds, with brain tissue presenting at the surface of the scalp, gauze fluffs may be used; care should then be taken not to apply the bandage too tight. The topical application of sulfa powder or any other agents is contraindicated.

Antibiotics, Chemotherapy: Penicillin 600,000 Units I/M b.i.d. and Streptomycin 0.5 gm I/M b.i.d. The use of sulfa drugs is contraindicated in the early phase of craniocerebral trauma.

Coma: Because of the existing intracranial tension, patients with craniocerebral trauma exhibit various degrees of depression of mental alertness. Increasing intracranial pressure renders the patient stuporous, semicomatose, or comatose. Other signs and symptoms of increased intracranial pressure include restlessness, nausea, vomiting, incontinence, bradycardia, hypertension, depression and irregularity of respiratory rate.

In the management of the comatose patient, the following considerations are of vital importance:

Maintenance of free air passages: Mechanical obstruction of the air passages is a common cause of death in the presence of coma. Such obstruction can be overcome, and prevented, by intratracheal suction and by the positioning of the patient. While held at an intermediate station, intratracheal suction through the nostril should be employed intermittently so as to rid the airways of mucus plugs. More important than any artificial means is the proper positioning of the comatose patient because it prevents aspiration of mucus and vomitus. It is highly preferable not to keep the comatose patient flat on his back. The most effective position is accomplished by placing the patient on his side with hips and knees flexed, the dependent arm behind his back, the chest supported by a blanket roll, and the head slightly anteflexed, but aligned with the spine. In order to oxygenate each lung to an equal extent, the patient must be turned from right to left coma position as often as every two hours.

Blood replacement and fluid maintenance: Surgical shock is not a common sequelae of craniocerebral trauma. It may, however, occur because of associated wounds or because of blood loss from extensive scalp lacerations. It is not advisable to give whole blood routinely. It should, however, be administered whenever the RBC is below 4,000,000 and the Hb below 14 gms. The patient should be maintained in a normal state of hydration. An average of 2500 cc of fluid per 24 hours is adequate. In the event that this fluid be administered intravenously, saline should not be used in excess of 1000 cc of the 24 hour total.

Urinary output: Many comatose patients are incontinent of urine. A certain number of patients with craniocerebral trauma, however, may have urinary retention for which all patients must be examined. In its presence catheterization is in order and should be repeated every eight hours. Restlessness, though commonly caused by increased intracranial pressure, may be due simply to bladder distention in the unconscious patient.

Sedatives and Analgesics: The use of sedatives and analgesics in the presence of craniocerebral trauma is contraindicated for three main reasons: (a) Those agents which are sufficiently potent to produce sedation and to relieve pain have a tendency to increase the intracranial tension and to depress respiration. (b) All sedatives and analgesics have a masking effect, and may impede the neurosurgeon in establishing indications for neurosurgical intervention. (c) Their effect may be such as to delay considerably the ever so necessary early surgery. In depriving temporarily the patient of rest and relief, it should be understood that restlessness and irrationalism are the direct sequelae of increased intracranial pressure. This condition can be relieved only by surgical intervention. Sedatives may set up readily a vicious cycle by increasing the pressure, by deepening the coma and, secondarily, increasing rather than relieving restlessness. It must be recalled also that increased intracranial pressure depresses the respiratory rate which may be embarrassed catastrophically by summation of the two factors.

The irrational, stuporous, or comatose patient is rarely sufficiently aware of pain to require analgesics. The patient with a mild head injury, not

producing mental derangement and not producing intracranial pressure, may occasionally complain of headache but should be able to tolerate it until surgical relief can be afforded. Even in these patients, sedatives should not be used, for they may mask gradually increasing intracranial pressure and may cloud the diagnosis of a developing intracerebral hematoma.

LACERATIONS OF THE SCALP

The devastating sequelae of improperly treated scalp lacerations necessitate rigid adherence to neurosurgical operative methods. Secondary infection of a scalp laceration may lead to subgaleal abscess, to osteomyelitis, and even to intracranial infection. A cleanly sutured scalp laceration is further mandatory because of the frequent late appearance of a neurological deficit as a manifestation of previously unrecognized intracranial pathology necessitating neurosurgical intervention. Among the more frequent injuries of this type, outstanding is the tangential bullet wound of the scalp without associated bony injury but with underlying extradural, subdural, or intracortical/subcortical hematoma. An adequate and expedient method of surgical repair of a scalp laceration is as follows:

Shave wide area surrounding laceration.
Cleanse skin surrounding laceration with soap and water.
Prepare skin surrounding laceration with merthiolate and alcohol.
Excise entire skin edge with scalpel.
Resect all layers of the scalp within the exposed area, including the periosteum.
Irrigate the wound thoroughly.
Close galea with INTERRUPTED sutures of OO SILK.
Close skin WITHOUT DRAINAGE with interrupted sutures of OOOO SILK.
Apply dry gauze dressing, best with collodion. (Avoid adhesive on the scalp).
Remove skin sutures after 48-72 hours.

PENETRATING WOUNDS OF THE SPINAL CORD

Wound Care: Debridement of the site of penetration may be deferred if it is certain that the patient will reach the neurosurgical team within twenty-four hours. Cleansing of the skin about the wound and application of a protective, dry dressing is all that needs to be done in that case at the forward aid station. The topical application of sulfa powder or other agents is contraindicated. Adhesive tape should not be employed on anaesthetic skin.

Only if evacuation should be delayed beyond a 24 hour period, surgical debridement of the wound in accordance with general surgical principles is indicated. If the wound should be situated in the center over the spine, radical debridement and closure is justified and desirable in order to facilitate earliest possible laminectomy. A large gaping wound as such does not present a contraindication to laminectomy. Delayed evacuation because of the gaping wound is not warranted. Debridement and closure can be carried out at time of neurosurgical intervention providing laminectomy is performed early.

Antibiotics, Chemotherapy: Penicillin 600,000 Units I/M b.i.d. and Streptomycin 0.5 gm I/M b.i.d. Particularly in view of the involvement of the GU tract, the use of sulfa drugs is contraindicated in paraplegic and quadriplegic patients.

Transportation: The safest method of transporting casualties with spinal cord injury consists of litter transport in the supine position. Care must be taken that the transport litter is well padded with blankets thus avoiding contact of the skin with rough suraces. In cervical cord injuries, the head should be immobilized by small sand bags (or blankets as substitutes) placed on each side of the face and neck. Consideration should be given the fact that temperature regulation is greatly disturbed below the level of spinal cord injury. In winter time, body heat must be conserved. The problem is even greater in hot summer climate because large portions of the body have been deprived of their sweat mechanism. For that reason, the employment of plaster of Paris casts is unwarranted; also decubital ulcers may develop under a cast within a few hours.

The lifting of a patient with trauma to the spinal cord requires certain precautions. The lift should be performed by three men. Two men place themselves on one and the same side of the patient. They will push their arms under the patient with the elbows almost fully extended and with the forearms in a supine position. The third man takes hold the patient's hand, supporting it and applying a moderate degree of traction at the same time. In lifting the patient from transport to stationary litter--the latter should be placed at right angle to the transport litter--the attendants will turn around the axis of the man supporting the patient's head and lift the patient on the frame without flexing the spine.

Position: The position of a patient with spinal cord injury should be prone or supine. Rather than bedding the paraplegic or quadriplegic patient on a cot, he is best cared for on a litter which has been padded amply with blankets. In order to prevent the dangerous occurrence of bedsores, he must be turned every two hours. This can best be accomplished by the so called litter-turning method. For the supine position, a plain, but well padded litter is used. For the prone position the padded litter is cut with a face piece and with an opening for the catheter. The patient's position is changed every two hours by placing a second padded litter on top of him and turning him between the two litters which have been strapped together.

Blood replacement and fluid maintenance. Whole blood should be administered intravenously whenever the RBC is lower than 4,000,000 and the Hb is below 14 gms. In order to obtain the optimum urinary output of 2000 cc, a minimum fluid intake of 4000 cc per 24 hours is most important. In the event that this fluid should be administered intravenously, saline should not be used in excess of 1000 cc per 24 hour total.

Bladder Care: Urinary retention with overflow exists in the vast majority of patients with injury to the spinal cord. For the ultimate recovery of bladder function, it is of the utmost importance to prevent bladder over-distention and bladder infection.

WITHOUT EXCEPTION, a Catheter (preferably size 16-18) should be inserted under sterile precautions at the first medical installation to which the patient is admitted and AS SOON as the diagnosis of cord injury has been established.

Sedatives and Analgesics: In view of the necessity of earliest possible surgical intervention, it is

best to refrain from the use of sedatives and analgesics. Definite contraindications to the use of Morphine exist in the presence of cervical cord injury because of the proximity of the pathology to the medullary respiratory center and to the roots supplying the diaphragm.

THE COMPLICATIONS OF ANTIBIOTIC THERAPY*

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ANTIBIOTICS may perhaps be most simply defined in the words of Keefer as anti-infective agents derived from microbes." The word microbe covers both the microphyte as well as the microzoon.

Our popular concept of antibiotics stems from the introduction into therapy of penicillin, a product of the growth of the fungus penicillium notatum. We have had a number of antibiotics on the market since the discovery of penicillin, some of which are also products of fungal growth and some of which are products of bacterial growth.

Herrell[2] reminds us that Pasteur and Joubert in 1877 were aware that certain air-borne organisms inhibited the growth of anthrax bacillus and that they even suggested that this phenomenon of antibiosis might be of use in the treatment of infections.

The first attempt to apply an antibiotic for the purpose of treatment was made by Emmerich and Loew[3] in 1899. These authors suggested that the products of bacillus pyocyaneous could be used for treating anthrax and diphtheria. A great deal of research work was going on in the field of antibiotics without causing much of a stir. Even Fleming's discovery of penicillin in 1928 went by with little popular notice.

It was not until the report of Chain and Florey[4] appeared in 1940 that real interest was aroused in antibiotics. These men were undoubtedly encouraged by the work of Dubos[5,6] who had discovered tyrothrycin in 1939 and perfected the method of its extraction from cultures of bacillus brevis. It was the failure of successful production and extraction of various antibiotics previously discovered which had accounted for the lag of interest in these new anti-infective agents. Florey was able to get sufficient penicillin to treat animals and finally a case of human infection. Following his report Florey was invited and came to the United States in 1941. After consultation with many agencies and a lot of work by government and civilian technicians, the commercial production of penicillin was on its way and the age of antibiotics began.

With the tremendous increase in the use of the antibiotics, many problems have arisen to confront the attending physician.

The complications resulting from the use of antibiotics are primary and secondary. The primary ones may be divided into those due to the reactions of the pathogenic microbe, and those due to the reaction of the host. The secondary complications may be divided into associated effects, and pitfalls for the physician.

MICROBE REACTION: Garrod[7] writing of the reactions of bacteria to chemotherapeutic agents described these reactions as suppression, habituation or acquired resistance, dependence and stimulation. It is now quite generally agreed that antibiotics are bacteriostatic and sometimes also bacteriocidal. It is of interest to note that the first three antibiotics to become commercially available, i.e., tyrothryoin, penicillin, and streptomycin, are the only antibiotics which are bacteriocidal and then only in high concentration. The newer ones are only bacteriostatic. All organisms are not affected the same, nor do they individually always react in a similar fashion. The reaction indeed depends on the particular strain of the organism, the environment (whether in vivo or in vitro), the size of the dose and the duration of antibiotic therapy, just to mention a few.

If the dosage is too small or continued over too short a time, we may find that we have eliminated the most susceptible strains and preserved the more resistant strain of the organism. This microbe will then flourish. It may be an organism which is naturally resistant to the antibiotic used or it may be one which was susceptible but which during the regime of low dosage had sufficient time to so alter its metabolism that it can now live and propogate in spite of the presence of the antibiotic. There are also organisms having an initial low resistance which rapidly acquire a strong resistance.

In the phenomenon of dependence the organism may show still greater versatility by not only adjusting itself to the presence of the antibiotic but by actually depending on it for sustained growth. When the antibiotic is withdrawn the organism may die or be so altered that the defense mechanism of the body readily take over and the patient improves.

Perhaps the most dramatic and paradoxical reaction of the organism is that of stimulation. Beeson[8] states that there is good evidence that this effect is produced by antibiotic concentrations lower than those required to inhibit growth. If this is so, it is an illustration of the Arndt-Schulz law, which states that poisons are stimulants in small doses.

Not only do these physiological changes occur in the organisms but they also suffer anatomical changes in response to antibiotic therapy. I well recall seeing this phenomenon first in response to the sulfonamides. The gonococcus lost its characteristic shape and varied in its staining qualities after administration of sulfonamides. Many workers have described similar changes occurring following administration of antibiotics or during the culture of organisms in vitro against ever increasing concentrations of antibiotics. The most remarkable report I have read told of the culture of staphylococcus in penicillin. After so many subcultures had been made against increasing concentrations of penicillin, the original organism now was bacillary in form. Another report told of bacilli subjected to the same tests. The bacilli became extremely elongated and distorted, looking more like filaments.

One may well ask at this point, "What is the mechanism of microbe resistance, and is it the same in all organisms?" The mechanism is not definitely known. It is not thought to be the same for each organism, nor is it the same for each drug. It may be concern-

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ed with certain enzyme systems or the assimilation of metabolites. It may be reversible or permanent. It may be by genetic selection or it may be a natural insusceptibility. A very interesting point is that at least in many instances of acquired resistance, the organism becoming resistant also becomes less virulent. Also, it is well known that sensitivity in vitro does not necessarily mean sensitivity in vivo. Perhaps the best example of this is diphtheria. The organism is sensitive to penicillin in vitro but not in vivo.

It was originally claimed that resistance to aureomycin and chloramphenicol does not develop. Increases in resistance to these agents ranging up to about 50-fold in various species of gram negative bacilli have now been reported.[8] Terramycin also behaves similarly, and it is interesting that organisms made resistant to it also became resistant to both aureomycin and chloramphenicol. Cocci and bacilli (especially proteus, pseudomonas and aerabacter) develop resistance" to aureomycin, chloramphenicol and terramycin. Actively growing broth cultures of certain organisms contain an enzyme which destroys chloramphenicol. ("Enzyme A").[10]

Bacitracin has been used only topically until recently. Meleney and his group have now studied its use systemically. It covers the same spectrum as penicillin and in many cases of penicillin resistance the organism is not resistant to bacitracin. Resistance to bacitracin in vitro has been induced in streptococcic of Groups A, B, and C and in staphylococcus aureus.[13]

Neomycin, myomycin, viomycin, polymyxin, circulin, subtilin, subtenolin, bacillomycin and other antibiotics have not been used on our service to date, therefore they are not a problem to us and will not be discussed at this time.

It is immediately apparent that the physician must use every available means to determine the proper choice of an antibiotic. He should have at hand the experience of research. Brainerd's "Table of Susceptibility of Microbial Pathogens to Chemotherapeutic Agents" is a widely publicized and widely republished source. It was published by the Medical Section, GHQ, FEC, in the Symposium on Military Medicine in the Far East Command, September 1951. Another table is found in TB Med 9, dated 22 June 1951. These guides should be supplemented with vitro sensitivity tests performed in our laboratories, especially whenever there is doubt and whenever therapeutic response is not prompt. It is our practice on the Medical Service at the 8166th to request sensitivity studies at the same time that we get the cultures. In the event that our choice of an antibiotic, which must sometimes be administered before cultures can be secured, has been wrong, we have wasted minimal time in ascertaining the antibiotic of choice.

HOST REACTION: Most of the host reactions to antibiotics are of an allergic or hypersensitive type. Hypersensitive patients are in general of three types. The first two have in common a circulating antibody, one type is heat stabile and the other heat labile. In the third type no demonstratable antibody is found in the circulating blood. Sensitivity to antibiotics usually fall into this group.

To Penicillin: The allergic manifestations are perhaps most common in penicillin therapy. Reactions may appear within as short a period as one or two hours following penicillin therapy, or they may appear two to three weeks following the termination of a prescribed course. Most manifestations are those of contact dermatitis or analogous to serum sickness.

A few years ago a great deal of "id" reactions and a flaring up of old fungal affections were seen, such as tinea cruris and tinea pedes. In the last two years, less of this type and more of the urticaria and angioneurotic edema reactions have been seen. It is not known whether this is on the basis of a difference in age of the population we are dealing with or whether it might be due to a difference in the purification of the penicillin administered.

It is well to point out at this time that though the antihistaminics are a great help in controlling these allergic reactions to penicillin, they are not always effective, often requiring a great many days and sometimes weeks before the symptoms and manifestations subside. While visiting our hospital last year, Dr. Richard Kern, Professor of Medicine, Temple University School of Medicine, Philadelphia, Pennsylvania, pointed out an old remedy which I had not used for sometime. He suggested and demonstrated his own technique in autohemotherapy. We have used this method ever since because we found that most of our cases were cured or greatly improved in forty-eight hours. This represented a real saving in hospital man-days lost. We often use both autohemotherapy and antihistaminics together. So far, fortunately, we have not had a case so severe as to consider the use of ACTH or cortisone, as reported by Hensler, Wurl and Gillespie.[9]

It is well to remember that in cases of contact dermatitis from penicillin, so often seen in nurses, parenteral administration of penicillin is not precluded. Only about 1% of such cases show systemic reactions to parenteral injection. Keep in mind too that many a case with a history of penicillin sensitivity will not react the second time. The longer the time between injections the less likely we are to have an allergic reaction. Also, the development of an allergic reaction does not necessarily mean discontinuance of penicillin. Many can be controlled while the drug is given. This is often important in cases where penicillin is by far the most efficacious antibiotic.

A most encouraging note comes from a report by Volini et al, as referred to by Dowling.[12] The latter states that a recent study (Violini) demonstrated that penicillin O can be administered with impunity to patients sensitive to the regular form of penicillin. (Penicillin G). Doses are the same as for Penicillin G.

To Streptomycin: Skin eruptions also follow the administration of streptomycin. However, they are usually transient and less severe than with penicillin. In event the eruption continues or becomes more severe, streptomycin should be stopped.

Eighth nerve reaction manifested by vertigo, tinnitus and deafness is the most important complication of streptomycin administration. In my experience this complication is not as common as it was five to six years ago, nor does it seem to come on as quickly. This may be due to a more highly purified product. Most of us have learned that dihydrostreptomycin gives less eighth nerve damage. At least one recent report[12] discredits this statement as pertains to hearing loss. When you check your patient for eighth nerve damage remember that many cases

have been missed because no such disturbances were perceived by the bed-ridden patient, even though objective tests for equilibrial and auditory function revealed deviations from normal. Dihydrostreptomycin may injure the spinal cord when given intrathecally, therefore streptomycin should be given by this route even when dihydrostreptomycin is given intramuscularly.

To Aureomycin: The common toxic manifestations of aureomycin are nausea, vomiting, and copious, bulky loose stools. Scrotal and anal pruritis, vaginitis, conjunctivitis and glossitis have been reported, as has an occasional case of euphoria. Hypersensitivity reactions are few. Dowling states that the latter may occur with any antibiotic.

To Chloromycetin: Chloromycetin may give rise to hypersensitivity reactions, nausea, vomiting, substernal burning, gastric irritation and loose, bulky stools. They are not of serious import. (Editor's Note: Recent reports indicate aplastic anemia may result from chloramycetin therapy.)

To Bacitracin: Bacitracin and tyrothrycin and tyrothrycin complex have not, to my knowledge, been found to cause hypersensitivity reactions." Bacitracin in some batches has been found nephrotoxic, producing albuminuria and other evidences of renal irritation. Tyrothrycin, a combination of gramicidin and tyrocidin, is hemolytic. It may be that more highly purified batches of these drugs will be found with less toxic effects, enabling us to use them parenterally.

ASSOCIATED REACTIONS: As a result of antibiotic therapy we too often win one battle but lose another. It is not enough to be concerned only with the eradication of the initial pathogen. Unless we remain alert we may well have other microbes join the battle against us and outgun us before we have called for other antibiotics.

My first experience along this line was in the treatment of chronic lung infection. At one time fully half my ward gradually developed chronic Freidlanders infection of the respiratory tract. About two weeks following cessation of penicillin the Friedlanders bacillus was no longer found. In these instances no harm came to the patient. Since then I have seen Monilial overgrowth of the respiratory and gastro-intestinal tract take place following elimination of antibiotic sensitive organisms from these locations. During local treatment of the mouth and throat by penicilin the normal flora is largely replaced by resistant coliform bacilli. During penicillin treatment, for example, resistant bacteria may appear where there were no bacteria before. This seems particularly likely in the G.U. tract. Garrod[7] cites three cases under treatment for bacterial endocarditis in which urinary infections due to Ps. pyocyaneous developed for no apparent reason other than the presence of penicillin in the urine. Such examples remind us to watch the patient and the microbe rather than the patient with the microbe.

If one treats a patient for two weeks or longer with antibiotics such as aureomycin and chloramphenicol there will usually be an interference with the normal production or utilization of Vitamin B, and also, perhaps, production of Vitamin K.

This interference will be manifest by mucous membrane lesions resembling those of pronounced riboflavin deficiency, by peripheral neuritis, optic neuritis, and gastrointestinal bleeding associated with prothrombin deficiency. Even x-ray changes in the intestinal mucosa have been demonstrated.

A number of patients have been sent to the hospital because of an incidental finding of glycosuria. In each case repeated urines and a post-prandial blood sample were checked. There was neither evidence of decreased sugar tolerance nor of glycosuria. It is not known what happened to cause the single urine finding. However, it is common pharmacologic knowledge that Fehling's solution will turn green when heated with penicillin. Therefore, a divided urine sample was tested to which penicillin was added in one specimen, and it was found that Benedict's solution will also turn green when heated with penicillin. This is interesting to speculate upon, and it is planned to run a series of penicillin treated patients against controls to see if it is of significance.

PHYSICIAN REACTIONS: Perhaps the most important complications that arise in the use of antibiotic therapy lie at the doorstep of the physican. These may be stated simply:

Failure to do a complete physical examination: At least six times in the last 22 months we have had patients admitted for "fever of undetermined origin." Upon physical examination it was found that all showed recently acquired venereal disease with visible manifestations thereof. Some had received penicillin prior to admission.

Failure to make a correct diagnosis: Too many cases of fever are being treated with "shotgun" antibiotic therapy. Cases of poliomyelitis and meningococcic meningitis have been seen to come in after several days of antibiotic therapy for an upper respiratory infection.

Failure to get cultures and sensitivity studies: Recently a case of staphylococcic pyelonephritis was treated, the initial culture of which prior to therapy was sensitive only to terramycin and aureomycin. It is quite likely that penicillin used against this staphylococcus would have been wasted as would have valuable time.

Getting anxious to do something: We recently had a case of high remittent fever which on the sixth day developed the signs of complicated infectious mononucleosis but later proved to be infectious hepatitis subsequently complicated by mumps. Many an anxious physician would have been treating this case with one or two antibiotics.

Failure to check for super infection: It is well to remember that in treating one infection you might lay the groundwork for a second organism which is not susceptible to the antibiotic being used. No doubt some cases of so-called acquired resistance necessitating the addition of a second antibiotic are in reality super infections not diagnosed.

Failure to know your synergistic drugs: It is not uncommon to find someone using penicillin and chloromycetin together. This combination is not synergistic. This combination is less effective than penicillin alone and is contraindicated.

Improper route of administration: Conscientious, good doctors have told me that rectal instillation of aureomycin is effective. In adults it has been shown that neither aureomycin nor terramycin is ab-

sorbed from the rectum. The respective status of chloramphenicol is not familiar to me, neither do I know whether infants can absorb any of these drugs per rectum.

Avitaminoses: Be sure to give added vitamins to all patients placed on antibiotics for over a week. Febrile illnesses often require additional vitamins even though antibiotics were never used.

Relapses: It is faily well established that if antibiotic therapy is to be used it should be given for a minimum of 5-7 days, in order to avoid relapses. These occur usually through the development of a resistant strain which was not knocked out at the same time the patient showed clinical improvement.

Check members of immediate family: Often in children with repeated sore throats, tonsillitis and pneumonias, it has been found that the mother and father may be carriers of the same or different organisms. Unless you examine them, all the patients may appear to be having relapses rather than reinfections.

These are but a few of the pitfalls which mark our way as we pursue the infective agent with the antibiotics of our present armamentorium.

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ATHEROSCLEROSIS*

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THIS paper represents an effort to generally review and summarize the subject of arteriosclerosis, more specifically atherosclerosis, with emphasis to be given the development of research and clinical thought on this state and current ideas regarding diet in its genesis. Nothing contained herein represents original work, but rather the work of many investigators pledged to this study.

My interest in this condition began soon after I, and some of my fellow medical officers, discovered to our apparent amazement that another of our medical group didn't encourage, yes even highly discouraged daily consumption of milk and eggs by his offspring. This seemed to us a breach of basic nutritional principles, and upon dutifully stating our feelings to that effect, we were politely, but firmly, directed to investigate the recent literature on the possible evil consequences of overloading the system with cholesterol and fat containing foods. This is what I have attemped to do. A Symposium on this subject presented in the American Journal of Medicine from July 1951 through December of 1951 made this task much easier than might seem possible otherwise.

It is appropos to note that arteriosclerosis in its various clinical forms is the number one cause of death in our country. It is also generally accepted that doctors have a greater propensity for exiting by way of the cardiovascular system. Thus it would seem highly desirable for us in the medical profession to decide if it is wise to drink milk each day, have eggs for breakfast, pork for dinner and a rich cheese dessert after the evening meal and generally ingest fat, cholesterol and related substances well beyond our basic needs. I won't be able to answer this question, but much food for thought has been unearthed in recent medical research.

Arteriosclerosis, simply stated, means hardening of the arteries, yet this definition is misleading in that the hardening, per se, is not the significant change that occurs. According to William Dock', arteriosclerotic change takes place in four different ways. One way consists of atrophy of the media and replacement of the muscle and elastic fibers by collagen, occurring as a diffuse symetrical process, producing wide, long tortuous vessels as seen on the temples of many adults and particularly so as they advance in age. This change is not associated with a decrease in the lumen size of the vessel and hence does not produce vascular accidents or insufficiency.

A second type of arteriosclerotic change has been variously termed aortic mucinous degeneration, cystic degeneration or medial necrosis. This is most often found in hypertensive hypothyroid individuals and is significant in that it commonly precedes dissecting aneurysm. Yet its significance is lessened by its relative infrequency.

A third way is termed regenerative intimal thickening, which occurs in arteries supplying tissues that decrease in bulk and functional activity with age, making this a vascular atrophy of disuse. Two outstanding examples of this are the changes that occur in the blood supply of the ovaries after the menopause and in the brain, where disseminated cortical

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atrophy occurs because of neuronal involution and death.

The fourth major type of arteriosclerotic change listed by Dock is clinically far the most significant. This is atherosclerosis, which does not yield itself to etiological or clinical definition, and thus is, for the present, best defined in descriptive morphologic terms. Duff[2] defines it as a pathological change affecting the intima of arteries that is characterized by focal thickenings of the intima in which stainable lipids can readily be demonstrated in and between the cellular elements. The lesions are highly variable and all extremes may be found, ranging from microscopic fatty flecks through to diffuse pleomorphic involvement. Also in age distribution, the incidence is variable. Changes have been found in the aortas of stillborn and newborn infants and range through to one hundred per cent incidence in the eighth decade. In our country, virtually every adult shows some degree of atheromatosis of the aorta, thus it would seem there is some type of inherent susceptibility in the human race. This is not true of mammals generally. The lesions of atherosclerosis were found to be exceedly rare in a study of 10,000 autopsies at the Philadelphia Zoo. Birds do have these changes, but not to sufficient degree to be symptom producing or the cause of death.

Of note is the finding of atherosclerotic changes of the same morphology distribution and severity as seen at post-mortem examination today in the arteries of mummies that were unearthed by archeologists working in the valley of the Nile some forty years ago. Man, it would thus appear, has been victim of atherosclerotic changes for thousands of years, and, as Kellner[3] states it, "if, as some think, the anxieties and tensions of modern life contribute heavily to the causation of atherosclerosis, it would seem that the builders of the pyramids were in their time as much a prey to anxieties and tensions as are the splitters of the atom today."

Factors such as race and sex have variously ascribed to the etiology of this disease. The low incidence of this change in Chinese and Okinawans has been cited frequently, but the poor keeping of vital statistics and the short life expectancy of these people make comparisons not entirely valid and the evidence for a definite racial difference for the time must be considered as not completely convincing. The lessened incidence and severity in the female of the species is well known, the condition only being comparable to the male when the female suffers from diabetes or hypertension. The increased life expectancy of the female can, in large part, be directly traced to her relative freedom from this threat.

Two major questions, two broad avenues of research, present themselves to the investigator of atherosclerosis. First, Why and how is cholesterol laid down in the vessel wall; and Second, Why is there selective localization of this process?

That this was primarily a chronic inflammatory change was one of the first etiologies ascribed to this condition. This opinion flowed mainly from the observation that atherosclerotic change was so frequently an accompaniment of syphilitic aortitis. Soon a school of thought was built around the possibility that physico-chemical changes inherent in the aging of extracellular colloids lead to an accumulation of lipoproteins. Later it was considered that chemical and physicochemical aberrations of serum lipids and lipoproteins were fundamental to pathogenesis. And even more recently it has been thought that metabolic activity of the arterial intima at the site of the atherosclerotic change may be the dominant causative factor. It may well be best considered that these various theories are not each without some merit, and rather than being contradictory, are complementary, each contributing something to the as yet unsolved problem of the exact etiology of atherosclerosis.

As early as the time of Virchow, the fatty character and cholesterol content of the lesions was noted. The first crude chemical analysis was done in the early 1900's. This work received great stimulus from the discovery that atherosclerosis could be experimentally produced by feeding rabbits cholesterol, and the demonstration that cholesterol and its esters were the major components of the atherosclerotic lesions both in man and in the experimental animal.

More recently the work of Gofman, Jones and associates[4] at the University of California in Berkeley has deeply stirred research thought on this problem and has opened hitherto unexplored avenues of approach.

In developing a summary of these major contributions, first mention may be made of the use of the rabbit. This animal normally has a blood cholesterol level but one-third that of man, and it was found that if this level were elevated to that equal, or about equal, to that of man, an atherosclerotic state eventually ensued. In fact, it became evident that it was a sine qua non that hypercholesterolemia of some degree be present for the production of atherosclerosis in the rabbit. This could be achieved by the simple oral feeding of high cholesterol content foodstuffs or more rapidly by administering intravenous feedings of colloidal solutions of the substance.

These findings in the rabbit led to many studies trying to establish a similar evident relationship in man; yet in the vast majority of cases, either with or without clinically evident atherosclerosis, the blood cholesterol level is found to be normal. However, the observation was many times made that in diabetes, hypothyroidism, nephrosis, and xanthomatosis, conditions known to be associated with definite hypercholesterolemia, the patients have atherosclerotic changes well beyond the average mean. So likewise was it noted that in many patients with coronary occlusions, frequently at an early age, there was a mild spontaneous hypercholesterolemia.

It was then discovered that rabbits in whom an alloxan induced diabetic state had been produced, were not only not liable to atherosclerosis from a normal diet, but actually did not become so afflicted when placed on high cholesterol diets. This even occurred in spite of the fact that extremely high cholesterol levels developed in some of the cholesterol-fed diabetic rabbits. This apparent contradiction, certainly from the state as seen in the human diabetic, was explained as the result of the concommitant elevation of the serum phospholipids and neutral fat along with the cholesterol elevation. When the diabetic state was treated with insulin, the phospholipids decreased and the atherosclerosis developed. Somewhat similar results were obtained with the use of the detergents Tween 80 and Triton 20, in which the cholesterol was elevated, but so likewise the serum phospholipid content, and the development of atherosclerosis was

markedly inhibited.

Clinically it was observed that many patients with coronaries at an early age and patients with the previously mentioned illnesses, diabetes, nephrosis, hypothyroidism, and xanthomatosis, those illnesses associated with a hypercholesterolemia, had a decreased phospholipid to cholesterol ratio. Thus the conclusion has been reached that the significant factor may not so much be the total amount of cholesterol in the serum, but rather the instability of the cholesterol present, with serum phospholipid level playing an important part as a stabilizing factor.

Working with a device known as the ultracentrifuge, Gofman, Jones and co-workers first published their results on the existence and concentration of "defective" serum lipoproteins in 1950. This marked one of the major advances in recent years in atherosclerosis research. The ultracentrifuge is an instrument capable of producing forces many thousands to many millions times the force of gravity, and thus individual molecules can be made to undergo flotation if they are less dense than the solution in which they are being carried. Units of migration rate have been established, named in honor of Svedberg, the scientist who invented the ultracentrifuge, and, working on this basic principle, Gofman, et al, have reported four basic classes of molecules existing in the serum.

1. Species of molecules which migrate with Sf values greater than 75 Sf units. These include the well known chylomicrons that increase following a fatty meal; there has not been found a correlation between these and atherosclerosis in humans.

2. Species which migrate with Sf values between 30-70 Sf units. These contain the major portion of the alimentary lipemia, some contain cholesterol, but their exact relationship to atherosclerosis remains unknown.

3. Species of discrete classes between 10 and 20 Sf units. There are at least three separate species of these, each containing approximately 30% cholesterol by weight, and appearing equally and definitely related to atherosclerosis in the human. Occasionally molecules of the Sf 20-30 range may be important.

4. Molecules of the Sf 3-8 unit range. These molecules, carrying a major part of the serum cholesterol, do not appear to be related to atherosclerosis.

Using a group of 1552 human subjects in which to study the Sf 10-20 molecules, Gofman found the following results: In 230 males and 32 females with proven atherosclerosis, 91% of the males and 97% of the females showed the presence of Sf 10-20 molecules. No correlation could be found between the serum cholesterol levels in these patients and the concentration of Sf 10-20 molecules. In 872 men and 258 women without known disease, they found males, age 20-40, 51% had molecules in the Sf 10-20 range, age 40-70, 59%; females, age 20-40, 26%, age 40-70, 56%, and the authors concluded that "the incidence and concentration of such molecules in the blood of our presumably normal individuals are in agreement with the data reported in the literature on the incidence and degree of atherosclerosis found in autopsy material as a function of age." And it was noted that individuals with diabetes, coronary insufficiency, the nephrotic syndrome, hypothyroidism and hypertension have a higher incidence of Sf 10-20 molecules than normal individuals in the same age group. In particular, the concentrations of the molecules are higher.

Regarding the factors that change the Sf 10-20 level, it was found that a single meal exerts no demonstrable effect, but that the great majority of individuals placed on a low-fat, low-cholesterol diet for a period of 16 weeks showed consistent trends to lower levels. Some individuals showed change as early as two to three weeks. The diet total intake of cholesterol was 200 mgm or less each day and the total of animal or vegetable fats was about 50 Gm. per day. This is considered to be a most unpalatable diet. Once removed from this diet regime, most individuals had a rise in the concentration of these molecules in a period of four weeks.

The conclusions of Jones, Gofman and co-workers, may be generally summarized as follows:

1. There is a strong positive correlation between the development of the Sf 10-30 class of lipoproteins and the rate of development of atherosclerosis. Total serum cholesterol is positively related to such development only when the increase is in the Sf 10-30 class.

2. The overall correlation of Sf 12-20 lipoprotein level with atherosclerosis is two to four times as great as that for serum cholesterol levels with atherosclerosis.

3. One year follow-ups of patients with coronary artery disease indicate that early recurrence of myocardial infarction is significantly associated with elevated Sf 10-20 lipoprotein levels.

4. In acute myocardial infarction, the prognosis for survival is worsened with highly elevated Sf 12-20 lipoprotein levels, as determined during the acute phase.

5. Follow-up studies indicate that the reduction of Sf 12-20 lipoprotein levels by dietary restriction of fats and cholesterol gives a significant degree of protection against recurrent myocardial infarction in patients with coronary artery disease whose levels before dietary restriction ranged above 80 mgm per cent.

Lewis and Page confirm these results, and the major dissenting opinion has come from Keys working at the University of Minnesota[5], who states that the "only reason G molecules (Sf 10-30 range) have any discriminating power is because they are imperfectly related to total cholesterol." On animal experiments, Keyes attempts to show by calculating correlation coefficients that "neither measurement is a very precise predictor, and certainly G is not better than cholesterol." He adds that it "is rash to judge on the basis of present scanty information."

Many drugs have been tried in hopes they might beneficially influence a change. Notable amongst these have been the lipotropic agents, alcohol, and more recently, heparin. Morrison[6] in Los Angeles claims definite advantages in treatment of coronary patients with choline, but many other groups feel equally as strong that it is of little or no benefit. During the last century it was thought that alcohol promoted arteriosclerotic change, but during this century the opposite opinion has gained ascendancy. However, before any individual allows his enthusiasm to mislead him in this possible prophylactic measure

against atherosclerosis, it bears mentioning that only has it been proven that alcohol is effective against the atherosclerotic lesions when employed in concentrations used in histologic preparations.

It has recently been demonstrated that heparin can profoundly influence blood lipid transport in the rabbit and in the human. It is, in fact, the only pharmacologic agent which rapidly shifts the lipoprotein pattern in humans in the direction of normality. Jones and Gofman consider the possibility that a deficiency of heparin or a heparin-like substance may be involved in causing the basic lipid metabolic defect in humans. Much research on this fascinating concept, with its clinical implications, is being conducted at present.

Regarding the second major approach to the problem of atherosclerosis, why there is selective localization of the process, even less is known. Areas of injury predispose to change. Sites of stress and strain have been studied, and examples such as the occurrence of atherosclerosis of the pulmonary arteries in conjunction with pulmonary hypertension, emphasize the possible role these factors may play. The propensity of syphilis to enhance the development of atherosclerosis of the aorta is a well known example of the effect of a vascular injury in man. Increased or decreased rates of permeation of the lipids into the initial wall may play a part. Nothing definite is known regarding the part played by intracellular and extracellular affinity on the part of intimal cells for the plasma lipids. Imponderable and nebulous terms such as "anoxia" and "disturbed nutrition" have been used in reference to possible disturbed metabolic activity on the part of the arterial intima. All this indicates that nothing definite is known of the means by which lipids enter the intima or how they become fixed there.

This has been a very general survey of the problem of atherosclerosis. Much confusion exists; so very much remains to be learned. Yet the findings of the past few years attest to the profound stirrings perceptible in this field. Defeatism and hopelessness are giving way to optimism that eventually prevention and even treatment may be attainable. The decision of whether, in our present state of knowledge, longevity per se is worth the price of depriving oneself of dietary pleasures is a matter of each individual's philosophy and personal conscience.

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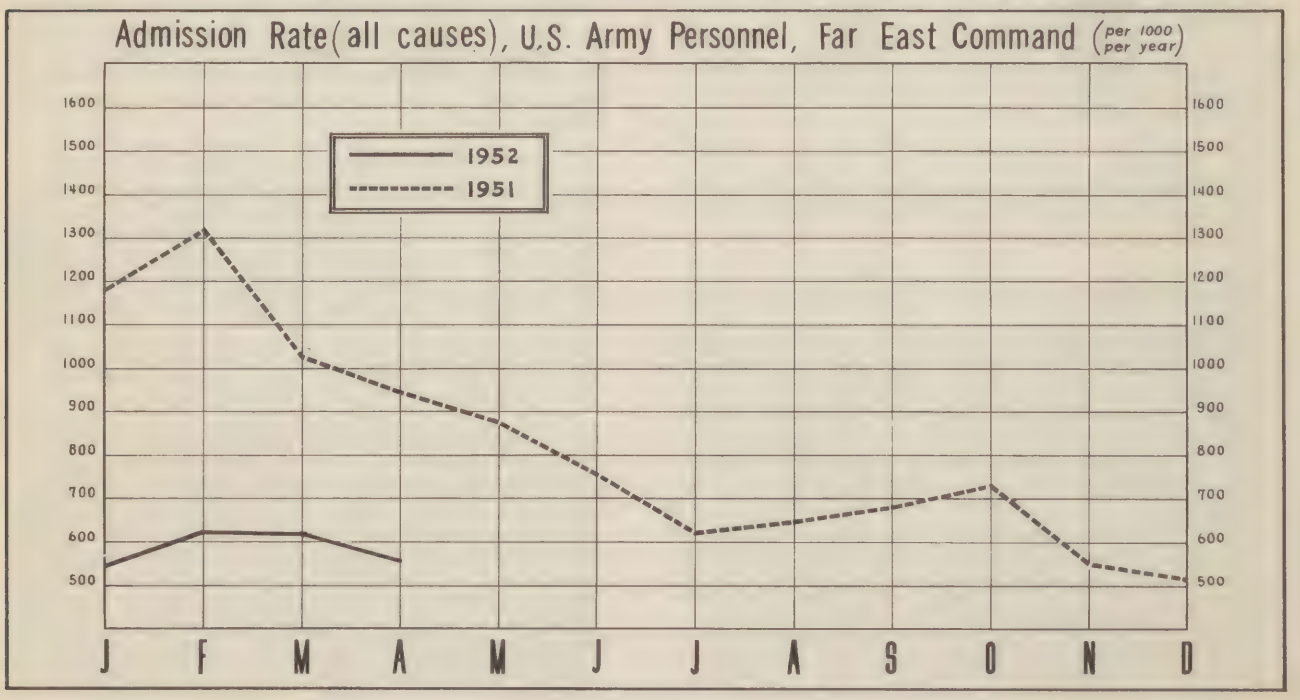
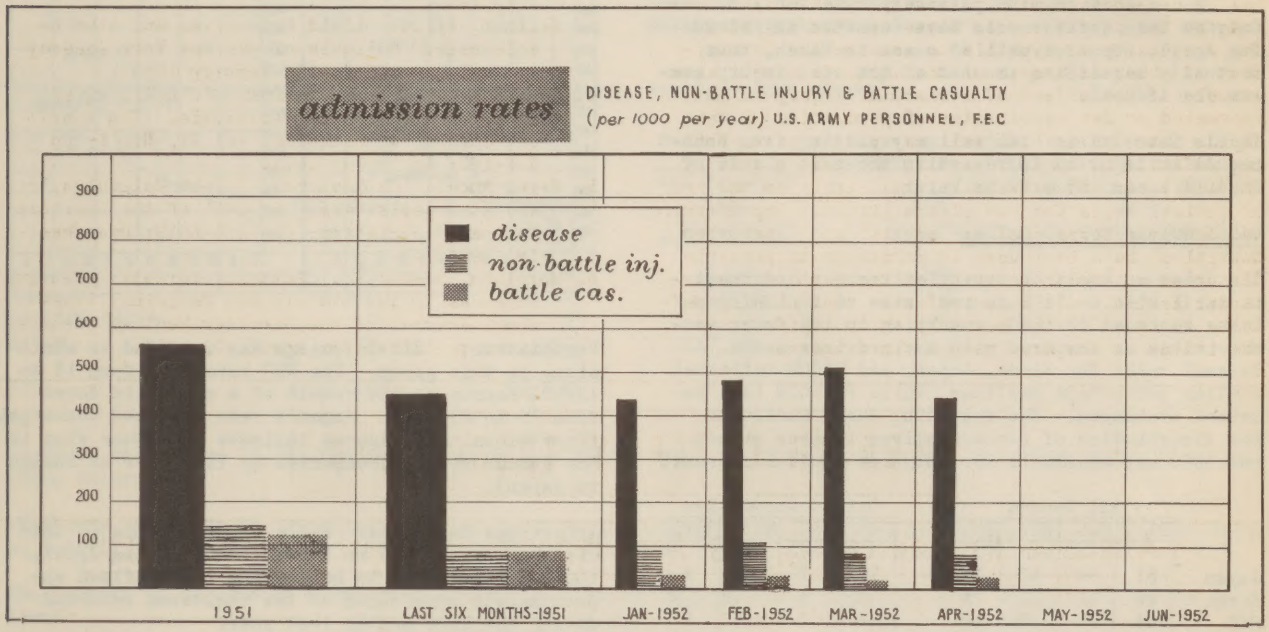
HEALTH OF ARMY TROOPS, FEC



Admission rates per 1,000 troops per annum, Army personnel, for the five-week period ending 30 April 1952, were as follows:

	FEC	JAPAN	KOREA	PHILCOM (AF)	RYCOM
All Causes	548	600	538	418	336
Diseases	440	525	409	368	293
Injuries	89	75	99	50	44
Battle Casualties	19	0	30	0	0
Psychiatric	19	15	21	6.2	8.6
Common Respiratory Diseases and Flu	126	187	102	56	61
Primary Atypical Pneumonia	2.9	2.2	3.4	0	.72
Bacillary Dysentery	.32	.47	.27	0	0
Amebiasis	.67	.56	.77	0	0
Malaria, new	6.1	0	9.4	0	.72
Infectious Hepatitis	7.0	7.4	6.5	6.2	11
Dermatophytosis	4.8	5.7	4.2	25	5.7
Rheumatic Fever	.29	.19	.36	0	0
Venereal Diseases	208	268	187	106	104
			DAILY NON-EFFECTIVE RATE		
All Causes	18	35	9.8	34	8.5



Health of the Far East Command for the month of April 1952 (unless otherwise specified) refers to Army personnel only.

ADMISSION RATES:

All Causes: In keeping with normal seasonal trends, the general health of the command improved slightly during April, the overall annual rate dropping to 548 admissions to hospital and quarters per 1000 troop strength. This reflects a reduction of 10% below the March rate. This figure is virtually the same as the rate in "pre-Korea" April of 1950 and is only one-half of the admission rate of April last year.

Disease: Likewise in keeping with seasonal trends, a 13% drop in the incidence of disease, to a rate of 440/1000/annum, was the primary cause in FEC's improved health picture. This reduction was shown in all major commands with the exception of PHILCOM(AF) where a 56% increase was noted, principally in non-contagious diseases. (In this instance, the Army strength in PHILCOM (AF) is relatively so low that an increase in only a few cases caused a severe increase in the rate). A 20% drop in colds, influenza, and pneumonia more than offset increases in the incidence of measles, mumps and malaria in Korea and thus resulted in a lowering of the overall disease rate. Venereal disease for the command rose 1½% to a rate of 208/1000/annum, the increase coming entirely in Korea, with other commands showing slight decreases. The high rate in Japan is a reflection of the high incidence of venereal disease in the training units of the XVI Corps. Malaria showed a sharp increase in Korea and Japan. In repetition of the seasonal fluctuation shown in 1951 when the incidence predominated during the period April thru September. Evidence indicates that all cases reported in Japan were actually infected in Korea. Hemorrhagic fever, as expected, has again been experienced in Korea with 9 confirmed cases reported (compared to none in March). Provisional May reports show 54 unconfirmed cases. No epidemics were

reported in the command and there was no unusual incidence of digestive tract infections.

Nonbattle Injuries: The slightly upward curve of admissions in this category continued during April with a rate of 89/1000 reported for FEC. Both PHILCOM (AF) and RYCOM showed reduced rates; however, in Korea the rate went up 3% and in Japan the rate jumped 15% to 75 per 1000, the highest point since December 1950. In the nonbattle injury group, approximately 7½% of the admissions were caused by motor vehicle accidents and 6½% were the result of athletics. A comparison of the admission rates for Korea and Japan is shown below:

ADMISSION RATES

	Motor Vehicle Accidents				Athletic Injuries			
	Jan.	Feb.	Mar.	Apr.	Jan.	Feb.	Mar.	Apr.
FEC	6.9	7.9	6.3	7.4	2.3	2.9	4.5	6.6
Korea	9.0	10.7	8.1	9.1	1.6	.9	2.7	6.5
Japan	2.9	3.3	3.7	5.0	3.4	6.2	7.1	7.3

Only 10 cold injury cases were reported in FEC during April, compared with 53 cases in March, thus virtually signifying the end of the cold injury season for 1951-52.

Battle Casualties: Admissions resulting from combat wounds or injuries increased in Korea to a rate of 30/1000/annum, from 22 in March.

DAILY NON-EFFECTIVE RATES:

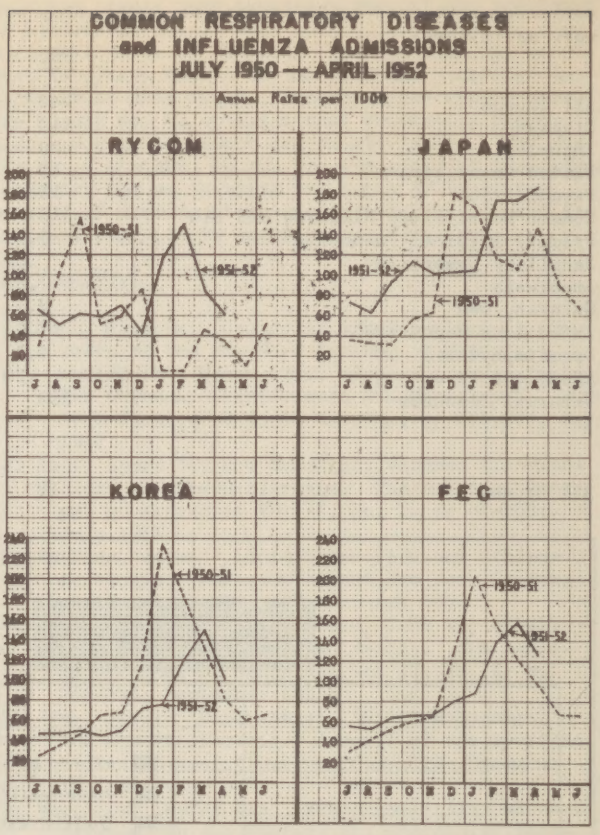
The downward trend of non-effectiveness continued in April with an "all causes" rate of 18/1000/day being recorded for FEC, resulting in 10% fewer non-effectives as compared with the previous month. "All causes" rates for Korea, Japan, and RYCOM reflected similar percentage declines, while PHILCOM (AF) remained unchanged. The following chart indicates the distribution of non-effectives (number of men per 1000 not available for duty for medical reasons):

	All Causes				Battle Casualties			
	Jan.	Feb.	Mar.	Apr.	Jan.	Feb.	Mar.	Apr.
Japan	51	44	40	36	12	7	5	4
Korea	10	11	11	9	1	1	.6	.8
FEC	24	22	20	18	5	3	2	2

	Disease				Nonbattle Injuries			
	Jan.	Feb.	Mar.	Apr.	Jan.	Feb.	Mar.	Apr.
Japan	28	26	25	23	11	11	10	9
Korea	7	7	7	7	3	3	3	2
FEC	14	14	13	12	5	5	5	4

DISEASES:

Common Respiratory Diseases and Influenza: It now appears that the peak of the respiratory disease season was reached in March and the incidence trend is downward again. A 20% decrease in this disease group was recorded in April, with the FEC admission rate dropping to 126/1000/annum. The pneumonia group of diseases reflected a similar change, a decrease of 25%. Of interest, is the observation that while Korea, PHILCOM (AF) and RYCOM all fit into this general picture, Japan's incidence continued to go contrary to the seasonal pattern, with a rise of 4% being reported. (Provisional telegraphic reports for May show a drop in the respiratory disease incidence in all commands, thereby indicating that seasonal peaks have been reached).



Psychiatric: Little change was reported in admissions in this group. The FEC rate rose from 18 to 19/1000/annum as the result of a change in Korea from 20 to 21/1000. Japan's rate remained unchanged. (Provisional May figures indicate a further rise in the Korean rate, accompanied by little or no change in Japan).

Infectious Hepatitis: While the incidence of this disease rose from 5 to 7/1000/annum during April, the rates continue to be low and only reflect approximately one-fourth of the incidence recorded during the same months last year.

Malaria: In keeping with normal seasonal trends, the FEC rate of admissions for malaria rose during April from 3.0 to 6.1/1000/annum, double the rate for March. (Provisional May figures, directly following the seasonal picture, are again almost double the rate for April).

Venereal Disease: FEC's "new" venereal disease cases rose slightly from a rate of 205 in March to 208 in April. This increase was due to higher rates in Korea, both among white (up 7%) and colored troops (5%). Each of the other commands showed slight declines in venereal disease. Divisional rates for Korea and Japan are broken-down as follows:

	2nd Div	3rd Div	7th Div	25th Div	40th Div	45th Div	Korea (less Div)	XVI Corps	Japan (less XVI Corps)
Jan	159	132	194	183	82	73	273	454	15
Feb	323	169	178	166	66	65	247	431	17
Mar	191	142	210	134	17	48	226	478	17
Apr	97	154	187	74	45	100	260	491	15

DEATHS:

"All Causes" hospital deaths in April reflected a rate of 1.1 per 1000 troops per annum, unchanged from March. In addition, a rate of 1.9 deaths per 1000 were carded-for-record. Of the total deaths reported by medical facilities, including both hospital and carded-for-record deaths (not including KIA), the following percentage breakdown occurred:

A	B	C			
Death Caused by	Percent of Total Deaths	Distribution of Column "B" by Commands			
		Korea	Japan	PHILCOM (AF)	RYCOM
Disease	14%	6%	7%	1%	-
Nonbattle Injury	60%	45%	15%	-	-
Battle Casualty	26%	25%	1%	-	-
Total	100%	76%	23%	1%	-

EPIDEMIC HEMORRHAGIC FEVER:

During the period January 1 - 31 May 1952, 184 cases of epidemic hemorrhagic fever have been reported by the Eighth Army, with 6 deaths, a case fatality rate of slightly over 3%.

All cases of suspected epidemic hemorrhagic fever are being evacuated from Divisional areas by helidopter to the 8228th MASH, located seven miles north of Uijongbu. This hospital is manned by medical officers of proven ability, most of whom had experience with this disease last year. Intensive efforts are being made to establish firm criteria for diagnosis and to determine the most effective method of therapy. To date, early hospitalization through evacuation by helicopter to avoid unnecessary trauma through transportation over rough roads, and symptomatic treatment based on knowledge gathered last year, together with unceasing nursing care, have given good results as shown by the fact that the case fatality rate is approximately one-third of that experienced during the early part of the outbreak last year, and approximately one-half of that experienced throughout the entire outbreak last year.

HOSPITALIZATION: (These data cover all patients, Army, Air Force and others).

The bed status as of 30 April 1952 was as follows:

	Designated Beds	Operating Beds	Average Beds Occupied		
			All Patients	Army Patients	
			Army Hospitals	USAF Hospitals	Navy Hospitals
Japan	13,250	10,600	4,042	124	1
Korea	5,400	5,579	2,124	6	36
PHILCOM (AF)*	0	0	10	41	0
RYCOM	400	344	214	0	0
FEC	19,050	16,523	6,390	171	37

In Korea there were 13,000 PsW operating beds, 7,325 of which were occupied by PsW and 1,520 occupied by civilian internees.

*Patients remaining in Army Hospital on 3 April were transferred to Air Force Hospital, Clark Air Force Base, on 4 April 1952.

The percent of designated beds and operating beds in Army Hospitals occupied as of 30 April 1952 was as follows:

	Percent of Designated Beds Occupied	Percent of Operating Beds Occupied
Japan	31	38
Korea	39	38
PHILCOM (AF)	0	0
RYCOM	54	32
FEC	34	39

EVACUATION:

Tabulated below is the number of patients evacuated from the major commands during the five report weeks ending 30 April 1952:

	Evacuated to the Zone of Interior			Other United Nations Personnel Evacuated to Their Homelands
	Army Personnel	Others	Total	
Japan	666	44	710	257
PHILCOM (AF)	2	0	2	-
RYCOM	90	43	133	-
FEC	758**	87	845	257

**Includes 30 Army patients hospitalized in USAF Hospitals.

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Capt. Charles A. Copeland, MSC EDITOR

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